

REMARKS**Claim Rejections – 35 U.S.C. § 103
Over Firoiu In View Of Forest**

Claims 1 and 3-6 stand rejected under 35 U.S.C. § 103 as unpatentable over Firoiu, *et al.* (U.S. Patent No. 7,149,664) (hereafter 'Firoiu') in view of Forest, *et al.* (U.S. Patent Publication No. 2004/0081079) (hereafter 'Forest'). The question of whether Applicants' claims are obvious or not is examined in light of: (1) the scope and content of the prior art; (2) the differences between the claimed invention and the prior art; (3) the level of ordinary skill in the art; and (4) any relevant secondary considerations, including commercial success, long felt but unsolved needs, and failure of others. *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1729-1730, 82 USPQ 1385 (2007). Although Applicants recognize that such an inquiry is an expansive and flexible one, the Office Action must nevertheless demonstrate a prima facie case of obviousness to reject Applicants' claims under for obviousness under 35 U.S.C. § 103(a). *In re Khan*, 441 F.3d 977, 985-86 (Fed. Cir. 2006). To establish a prima facie case of obviousness, the proposed combination of Firoiu and Forest must teach or suggest all of Applicants' claim limitations. MPEP 2142 (citing *In re Royka*, 490 F.2d 981, 985, 180 USPQ 580, 583 (CCPA 1974)). As shown below in more detail, the proposed combination of Firoiu and Forest cannot establish a prima facie case of obviousness because the proposed combination does not teach each and every element of the claims of the present application. As such, Applicants respectfully traverse each rejection individually.

**The Proposed Combination of Firoiu and Forest
Does Not Teach Or Suggest Each And Every
Element Of Claim 1 Of The Present Application**

Independent claim 1 of the present application recites:

1. A method for dynamically provisioning computer system resources, the method comprising:

monitoring a connection performance parameter of a data communications port operating in a data communications protocol having a connection backlog queue having a connection backlog queue size, the connection backlog queue comprising one or more connection requests,

wherein monitoring a connection performance parameter of a data communications port further comprises:

receiving a connection request and determining that the connection backlog queue is full; and

calculating an average accept processing time and calculating an average connection request arrival interval for the connection backlog queue, wherein:

the accept processing time comprises the time interval between accepting connections; and

the connection request arrival interval comprises the inverse of the connection request rate, the connection request rate comprising a rate at which connection requests arrive and are placed in the connection backlog queue; and

changing the connection backlog queue size in dependence upon the monitored connection performance parameter without interrupting the operation of the data communications port and without user intervention wherein changing the connection backlog queue size further comprises increasing the connection backlog queue size if the accept processing time is greater than the connection request arrival interval.

- As shown below in more detail, the combination of Firoiu and Forest cannot be used to establish a prima facie case of obviousness against the claims of the present application because the combination of Firoiu and Forest does not teach or suggest each and every element of claim 1 of the present application.

**Firoiu Neither Teaches Nor Suggests Receiving
A Connection Request And Determining
That A Backlog Queue Is Full**

The Office Action takes the position that Firoiu at column 2, lines 1-2 and column 1, lines 50-51 discloses "receiving a connection request and determin[ing] that the connection backlog queue is full[.]" a limitation found in claim 1 of the present application.

Applicants respectfully note in response, however, that what Firoiu at column 2, lines 1-2 and column 1, lines 50-51 in fact discloses is:

In a TCP network in which data that is sent is acknowledged by a receiver, the queue size of a buffer in a node may be regulated in a congestion control module by dropping packets

In addition, Applicants note that what Firoiu at column 1, lines 50-51 in fact discloses is:

When the average queue size exceeds a preset threshold, the node refuses to service i.e. "drops" a percentage of packets as determined by a control function.

That is, Firoiu at column 2, lines 1-2 and column 1, lines 50-51 discloses a TCP network in which congestion is controlled by dropping packets when the average queue size exceeds a preset threshold. Firoiu's TCP network in which congestion is controlled by dropping packets when the average queue size exceeds a preset threshold does not disclose receiving a connection request and determining that a backlog queue is full as claimed in the present application. In fact, Firoiu "fails to specifically teach a connection request," a point the examiner concedes in the Office Action at page 7. Firoiu also fails to teach the determination that a backlog queue is full. Firoiu teaches the *dropping* of packets when *average* queue size exceeds a predetermined threshold, and as such does not contemplate a queue becoming full. The TCP network in which congestion is

controlled by dropping packets when the average queue size exceeds a preset threshold of Firoiu neither discloses nor suggests receiving a connection request and determining that a backlog queue is full as claimed in the present application. The rejections under 35 U.S.C. § 103 should be withdrawn, and the claim should be allowed.

**Firoiu Neither Teaches Nor Suggests Changing A
Connection Backlog Queue Size Without Interrupting
The Operation Of A Data Communications
Port And Without User Intervention**

The Office Action takes the position that Firoiu at Fig. 2, elements 210, 220, and 230 discloses “changing the connection backlog queue size...without interrupting the operation of the data communications port and without user intervention,” a limitation found in claim 1 of the present application. Applicants respectfully note in response, however, that what Firoiu at Fig. 2, elements 210, 220, and 230 in fact discloses is the determination of a drop percentage based on a queue law function and a control function. *See* Firoiu at column 4, lines 28-48. Firoiu’s determination of a drop percentage based on a queue law function and a control function, does not disclose changing a connection backlog queue size without interrupting the operation of a data communications port and without user intervention as claimed in the present application. Firoiu teaches that the intersection of a queue law function and a control function is used to determine a drop percentage, which is used to “drop packets evenly across all flows.” *See* Firoiu at column 4, lines 51-54. At no point in Firoiu is the *changing* of queue’s size, i.e. maximum capacity, disclosed. Firoiu instead teaches congestion control by informing the *sending* node that there is congestion, in response to which the *sending* node adjusts its own sending rate. *See* Firoiu at column 3, lines 44-57. Furthermore, this teaching by Firoiu necessitates the interruption of operation of a data communications port, which is in direct contravention of claim 1, because Firoiu’s congestion control is accomplished by dropping acknowledgment packets. *Id.* In effect, Firoiu teaches dropping packets evenly across all flows to control node congestion, which stands in stark contrast to the present application, which neither drops packets nor instructs nodes to slow their output, but rather adjusts queue capacity on-the-fly, providing for the management of overload

conditions while avoiding drops. *See, e.g.* Applicants' Original Specification at paragraph 39. As such, Firoiu's determination of a drop percentage neither discloses nor suggests changing a backlog queue size without interrupting the operation of a data communications port and without user intervention. The Office Action therefore cannot establish a *prima facie* case of obviousness. The rejections under 35 U.S.C. § 103 should therefore be withdrawn, and claim 1 should be allowed.

Forest Neither Teaches Nor Suggests A Connection Request

The Office Action takes the position that Forest at paragraph [0728], lines 4-6, teaches a connection request as claimed in the present application. Applicants respectfully note in response, however, that what Forest at paragraphs [0728]-[0729] actually discloses is:

[0728] The FlexRay coding mechanism defines a Transmission Start Sequence (TSS), which is used to initiate a proper connection setup throughout the network before the actual FlexRay frame or symbol is transmitted. The transmission of the TSS is detected by the star coupler and is treated as a connection setup request. The star coupler returns to its idle state after the bus has been released to the idle state by the transmitting node.

[0729] At the end of each frame transmission, all star couplers must return to the initial state before the next connection setup request is initiated. This is necessary in order for the star coupler to be able to process the next configuration request correctly.

That is, Forest at paragraphs [0728]-[0729] discloses a transmission start sequence which is treated as connection setup request and is required prior to the communication of each frame. Forest's transmission start sequence does not disclose a connection request as claimed in the present application. Although Forest teaches that the transmission start sequence is treated as a "connection setup request," Forest's transmission start sequence is completely different from the "connection request" presently claimed. Forest's transmission start sequence is simply a continuous sequence of logical zeroes, which is inserted at the front of a bitstream, so that it is before any byte sequence to be communicated. *See* Forest at paragraph [0886]. Forest's transmission start sequence is never stored by a data communications port in a backlog queue like the connection

requests claimed in the present application. This is because Forest's transmission start sequence is sent to multiple nodes throughout a network, to ensure that they are properly configured to receive whatever follows next in the bitstream. As such, Forest's transmission start sequence which is treated as a connection setup request and is required prior to the communication of each frame does not disclose a connection request as presently claimed. The Office Action therefore cannot establish a prima facie case of obviousness. The rejections under 35 U.S.C. § 103 should be withdrawn and the claims should be allowed.

**The Office Action Does Not Examine
The Claims In Light Of The Factual
Inquiries Set Forth In *Graham***

In addition to the fact that the Office Action has not established a prima facie case of obviousness, there is at least another reason that the rejections under 35 U.S.C. § 103 should be withdrawn. The Office Action does not examine Applicants' claims in light of the factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966). As mentioned above, the question of whether Applicants' claims are obvious *vel non* is examined in light of: (1) the scope and content of the prior art; (2) the differences between the claimed invention and the prior art; (3) the level of ordinary skill in the art; and (4) any relevant secondary considerations, including commercial success, long felt but unsolved needs, and failure of others. *KSR Int'l Co. v. Teleflex Inc.*, No. 04-1350, slip op. at 2 (U.S. April 30, 2007); *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966). "To facilitate review, this analysis should be made explicit." *KSR*, slip op. at 14 (citing *In re Kahn*, 441 F. 3d 977, 988 (Fed. Cir. 2006)). That is, the Office Action must make explicit an analysis of the factual inquiries set forth in *Graham*. In present case, however, the Office Action does not even mention the factual inquiries set forth in *Graham*. As such, the rejections under 35 U.S.C. § 103 are improper and should be withdrawn.

Relations Among Claims

Claims 3-6 depend from independent claim 1. Each dependent claim includes all of the limitations of the independent claim from which it depends. Because the combination of Firoiu and Forest does not teach or suggest each and every element of independent claim 1, the combination of Firoiu and Forest also does not teach or suggest each and every element of the dependent claims of the present application. As such, claims 3-6 are also patentable and should be allowed.

Conclusion

Claims 1 and 3-6 stand rejected under 35 U.S.C. § 103 as being obvious over the combination of Firoiu and Forest. For the reasons stated above, the combination of Firoiu and Forest does not teach or suggest each and every element of Applicants' claims. Claims 1 and 3-6 are therefore patentable and should be allowed. Applicants respectfully request reconsideration of claims 1 and 3-6.

The Commissioner is hereby authorized to charge or credit Deposit Account No. 09-0447 for any fees required or overpaid.

Respectfully submitted,

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